

## **GLOSSARY OF TECHNICAL TERMS AND GEOLOGIC TIME SCALE**

**Active Fault** – An active fault is generally considered to be any fault that has undergone displacement of sufficient geologic recency to suggest that there is a potential for displacement in the reasonable near future. A fault is considered active if there is displacement within Holocene (within the past 10,000 years) deposits regardless of debatable evidence.

**Alluvium** – Sand, gravel, silt, and clay deposited by rivers and streams in valley bottoms.

**Aquifer** – A geologic formation, a group of formations, or a part of a formation that is water bearing. A geological formation or structure that stores or transmits water, or both, such as to wells and springs. Use of the term is usually restricted to those water-bearing structures capable of yielding water in sufficient quantity to constitute a usable supply.

**Clay** – A particle of sediment less than 1/256 of a millimeter in diameter. Also, a family of platy silicate minerals that commonly form as a product of weathering.

**Fault** – A fracture or zone of fractures along which there has been displacement of the sides relative to one another, parallel to the fracture.

**G or g** – The force of gravity (an acceleration of 9.78 meters/second<sup>2</sup>). When there is an earthquake, the forces caused by the shaking can be measured as a percentage of the force of gravity, or percent g.

**Geomorphology** – The study of the classification, description, nature, origin, and development of landforms and their relationships to the underlying geologic structures, and the history of geologic changes as recorded by these surface features. California is divided into 11 Geomorphic Provinces.

**Geosyncline** – A large downwarped structural trough with a thick accumulation of sediments and volcanic rocks; often formed in part of a tectonic cycle with a subsequent orogeny (mountain-building period).

**Gravel** – All sedimentary particles (rock or mineral) larger than 2 millimeters and smaller than 64 millimeters in diameter.

**Holocene** – An epoch of the Quaternary Period, from the end of the Pleistocene, approximately 8,000 years ago to the present time (see geologic time scale at end of glossary).

**Loam** – A rich, permeable soil composed of a mixture of clay, silt, sand, and organic matter.

**Maximum Moment Magnitude** – An estimate of the size of a characteristic earthquake capable of occurring on a particular fault. Moment magnitude is related to the physical size of a fault surface and movement along that surface.

**Meander** – The turn of a stream, either live or cut off. The winding of a stream channel in the shape of a series of loop-like bends.

**Monocline** – A local steepening in an otherwise uniform gentle dip.

**Quaternary** – The most recent period of the Cenozoic era, encompassing the time interval of 1.6 million years ago through today. See geologic time scale at end of glossary.

**Richter Scale** – Introduced in 1935 by Charles F. Richter, the Richter scale is a numerical scale for quantifying earthquake magnitude -- typically it refers to local magnitude, but for larger quakes, it often refers to surface-wave magnitude. (Currently, large quakes are generally assigned a moment magnitude, which is scaled to be similar, but is based on seismic moment, and is a better measure of the *energy* of an earthquake.) Since the Richter scale is logarithmic, *very small* earthquakes (microearthquakes) can have a negative magnitude. While the scale has no theoretical upper limit, the practical upper limit, given the strength of materials in the crust, is just below 9 for local or surface-wave magnitudes (and just below 10 for moment magnitudes).

**Riparian** – Pertaining to the banks of a river, stream, waterway, or other, typically, flowing body of water as well as to plant and animal communities along such bodies of water. This term is also commonly used for other bodies of water, e.g., ponds, lakes, etc., although *Littoral* is the more precise term for such stationary bodies of water. Also see *Riverine*.

**Riverine (Systems)** – Open-water habitats. Typically include all open-water areas that occur within a defined channel of a stream as well as along perennial and intermittent stretches of streams and along some major dry washes. In some cases, riverine systems are bounded by *Palustrine Wetlands* that develop in the floodplain on either side of the defined channel. The riverine system and the adjacent palustrine wetlands are often referred to as *Riparian Habitat*.

**San Andreas Fault** – The San Andreas Fault is a right-lateral strike-slip fault that runs roughly northwest to southeast along the western coast of North America. This is a transform boundary between the Pacific and the North

American tectonic plates. Many major earthquakes have been caused by slipping and ruptures of this fault. The San Andreas fault system is part of a complex system of faults, isolated segments of the East Pacific Rise, and scraps of plates lying east of the East Pacific Rise that collectively separate the North American plate from the Pacific plate. On a more generalized or global scale, the North American plate can be thought of as lying across and partly covering the northern part of the Pacific system of plates. In simplified terms, the Pacific system of plates includes three elements: a westward expanding plate (the Pacific plate), an eastward-expanding plate (the Juan de Fuca plate), and a spreading center (the East Pacific Rise) from which the plates expand as new material is added. To the north, the Pacific plate is underriding, or being subducted under, the North American plate along the Aleutian thrust.

**Sand** – Loose particles of rock or mineral that range from 0.0625-2.0 millimeters in diameter.

**Silt** – Loose particles of rock or mineral that range from 0.002-0.0625 millimeters in diameter.

**Subsidence** – Gradual settling or sinking of the ground surface with little or no horizontal movement, usually as a result of the withdrawal of oil, natural gas, or groundwater, or hydrocompaction.

**Topography** – Graphic representation of the surface features of a place or region on a map, indicating their relative positions and elevations.

# The Geologic Time Scale

		Eon	Era	Period	Epoch		
Precambrian			Phanerozoic	Cenozoic	Quaternary	Holocene	0.01 Ma
					Pleistocene	1.6 Ma	
					Tertiary	Pliocene	5.3 Ma
						Miocene	23.7 Ma
						Oligocene	36.6 Ma
						Eocene	57.8 Ma
						Paleocene	66.4 Ma
				Mesozoic	Cretaceous		
					Jurassic	144 Ma	
					Triassic	208 Ma	
				Paleozoic	Permian	245 Ma	
					Pennsylvanian	286 Ma	
					Mississippian	320 Ma	
					Devonian	360 Ma	
					Silurian	408 Ma	
					Ordovician	438 Ma	
					Cambrian	505 Ma	
						570 Ma	
				Proterozoic			
				2500 Ma			
			Archean				
				3900 Ma			
			Hadean				
				4550 Ma			